

GP-301069

ROBOTIC RACK LOADING APPARATUS AND METHOD

ABSTRACT OF THE DISCLOSURE

Robotic rack loading apparatus and method include features and loading steps that provide essentially damage free rack loading of automotive panel assemblies into a specially designed rack. The rack includes dunnage elements containing sets of slots with lead-in upper edge angles and sensing holes associated with the slots. The robot carries a modified end of arm tool including a sensor to sense the location of a sensing hole to position a panel for loading into a corresponding set of slots. Another sensor preferably senses objects or structure in the rack to position the tool in a preload position. A compliant device allows lateral and longitudinal compliance of the end of arm tool to allow assemblies to be funneled into position in the slots without encountering damaging stress. A programmed robot can thus automatically load panel assemblies into the rack without damage.